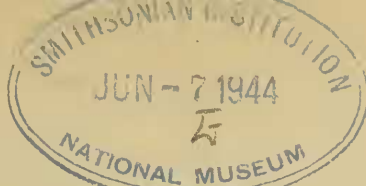


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NOTES ON FISHES IN THE ZOOLOGICAL MUSEUM
OF STANFORD UNIVERSITY. XVI. A NEW
SPECIES OF SAND-DIVER, WITH NOTES ON
SOME RARE GOBIOID FISHES.

BY ALBERT W. C. T. HERRE

During 1940 and 1941 I was collecting fishes in the Philippines, Malaya, India, and Hong Kong, and studying the fisheries of those regions. Many new species were obtained, and large additions were made to our knowledge of rare and obscure species. Descriptions of nearly all the new species have been published already, but a new and interesting sand-diver was discovered when the fishes collected at Singapore were studied.

The sand-divers are a small group of slender, trimly built reef fishes, with pointed snout, inhabiting the coral reefs of the tropical Indo-Pacific. They live on the coral sand banks, where they creep in and out under algae, hydroids, corals and rocks. When pursued they dive into the sand with apparently as much ease as if it were water. Their home is a burrow in the sand, to which they retreat after feeding, and where they spend much of the time. On extensive sand flats they may occur in abundance.

Parapercis longifilis Herre, new species.

Dorsal V-I-20; anal I-17; scales in the lateral line 60; scales from lateral line to dorsal origin 5, to anal origin 13, to middle of underside 16; predorsal scales 7. The scales are ctenoid, except on the head, breast, and between the ventrals back to the anus. The margins of the preopercle and opercle are smooth.

The depth is 5.68, the head 4, the truncate caudal 6 times in the length. The body is plump, elongate, with broad, pointed head and steeply inclined snout. The breadth of the head is 1.35 times in its own length. The eye is lateral, high up, 4.28 times in the head, the distance from the hind margin of the eye to the tip of the snout only slightly more than to the posterior end of the opercle; the snout is 3 times in the head; the interorbital is 1.5 times in the eye. The mouth is moderately oblique, the posterior angle of the maxillary beneath the anterior part of the eye. The teeth are typical of the genus, a pair of short, stout antero-lateral canines present.

The first dorsal is small, the fourth spine longest, 4.5 times in the head or 18 times in the length; the two dorsals are almost completely separated, only a basal strip of membrane remaining; by elevation the fifth spine, the spine of the second dorsal is moved, thus proving their connection. The spine of the second dorsal is half the length of the head. The first 8 rays of the second dorsal are all elongate, with filiform tips, the first ray 3.37, the second ray 3.18 times in the total length; the others are shorter although the fifth is about as long as the first; the remaining rays become of nearly uniform height, the penultimate 2.7 in the head or 10.8 in the length. The anal rays are all like the penultimate dorsal ray. The small pectorals and ventrals do not quite reach the anal fin, their lengths equal, 5.14 in the total length.

The color in alcohol is brown above, yellowish brown below, with 8 darker crossbands over the back and down to the lateral line; the first is on the nape, the second under the first dorsal, the rest under the second dorsal; a series of large black dots along the dorsal base, and in each crossband, arranged to suggest a V, above the lateral line; a large, rounded, dark brown spot below the lateral line between each pair of crossbars, alternating with dark brown vertical bars or small spots; a black spot on the upper and one on the lower part of the caudal base, connected by a narrow, outwardly curved black bar. The ventral membranes are dusky and the anal has a submarginal dusky band; both ventrals and anal were probably dark violet or violet-brown in life; the caudal is violaceous brown, with a broad dusky band on the lower two-thirds of the free end; the other fins are clear. A violet-brown band, with pale marginal stripes, extends from the eye to the upper lip. A dusky band curves behind the eye and then downward across the cheek; the preopercle and opercle with numerous rather large pale spots; all the head marks are faded and seen with difficulty.

I collected the type and only specimen, 108 mm. long, on the extensive sand flats at Siglap, Singapore. The upper half of its body resembles Day's figure of *Parapercis punctata*, but it is evidently not that species and is unlike any thus far described.

ASTERROPTERYX ENSIFER (Bleeker).

Brachyleotris ensifera Bleeker, Versl. Akad. Amsterd., vol. VIII, p. 375, 1874.

M. Weber, Fische, Siboga Expedit., p. 454, 1913.

Four specimens of this rare little eleotrid were collected from a coral head, in a lagoon within a group of islets several miles west of the town of Jolo; 3 are females, 15 to 18 mm. in length, and a male is 17 mm. long.

Dr. Bleeker had but a single specimen, 29 mm. long, from the island of Buru. Dr. Weber obtained 3 examples, 27 to 35 mm. in length, from Sarassa, in the Postillon Islands, which lie between the Sunda and Flores Seas, north of Sumbawa and southwest of Celebes. They were taken from coral bottom, at a depth of 35 meters.

Dorsal VI-1-10; anal I-9 or 10; scales in a longitudinal series 24 (22 also?), deciduous; transverse series 8; predorsal scales 5, the anterior one extending between the posterior part of the eyes; the head and trunk are covered with ctenoid scales.

The form and proportions are much like those of *Asterropteryx semipunctatus*, from which it is strongly differentiated by the presence of a spur at the angle of the preopercle, instead of the 3 to 6 stout teeth or spines of the common species. This spur extends from a third to almost entirely across the opercle. The head of my largest specimen is 2.6, the caudal 3 times in the length. The long, pointed pectoral equals the head and extends to a point well over the anal fin; the pointed ventral is a little shorter, reaching the anal origin or beyond; the third dorsal spine is more or less threadlike, extending well upon the second dorsal when depressed.

Preserved specimens are brown, with 3 wide and much darker cross-bands; each scale is marked by one or two small, pearly, circular spots or dots, evidently blue in life; the dorsals are blackish brown, or the upper margin of the first dorsal may be clear; the anal may be dark brown to nearly clear; the caudal is more or less brown, the other fins clear.

Gladiogobius ensifer Herre, with which *Asterropteryx ensifer* might be confused, is well distinguished; it is a true goby, with ventrals always united basally, and with a thin, delicate membrane extending for a third or half their length. The head and nape are entirely naked. *Asterropteryx ensifer* is a true eleotrid, with the ventrals well separated and without a trace of a connecting membrane. The head and nape are covered with ctenoid scales.

ILLANA BICIRRHOSA (M. Weber).

Five specimens, 50 to 68 mm. in length, were collected in a nipa swamp at Capiz, Panay, and 2, of 62 and 70 mm., were taken at Dumaguete. Only known heretofore in the Philippines from the Rio Grande at Cotabato, Mindanao, and supposed to be very rare. Search in nipa and mangrove swamps will doubtless show it to be fairly common. It looks so much like a *Glossogobius*, as Koumans has stated, that it has doubtless

been mistaken for *G. celebius* or *G. giurus*. Known elsewhere from Celebes and Java.

PANDAKA PUSILLA Herre.

Fifty-four specimens, 9.4 to 14 mm. in length, were collected in a mangrove swamp near Coron, Busuanga; 39 examples, 10 to 14 mm. in length, were taken from a nipa swamp near Capiz, Panay. This dwarf goby has been known hitherto only from Sitankai, Sulu Province, where it is common on the tidal flats.

VAIMOSA BALTEATA Herre

Vaimosa balteata Herre, Zoolog. Series Field Mus. Nat. Hist., vol. XVIII, p. 419, 1935.

Vaimosa balteata Herre, Zool. Ser., Field Mus. Nat. Hist., vol. XXI, fig. 21, p. 359, 1936.

One specimen, 13 mm. long, of this rare goby was taken from a pool near the Fisheries Station, Zamboanga, P. I. It has been known previously from the type, 19.5 mm. long, and a damaged specimen of 20 mm., both taken from a creek flowing into Majalibit Inlet, Waigiu Island.

This boldly marked little fish is a noteworthy addition to the Philippine fauna. The figure cited above gives an excellent idea of its characteristic appearance. It is recognized at a glance by the broad black band from the top of the dorsal down to the belly and the black bar from the eye to the lower end of the pectoral base.

SICYOPUS ZOSTEROPHORUM Bleeker.

Sicydium zosterophorum Bleeker, Nat. Tijds. Ned. Ind., vol. XII, p. 296, 1856-7.

Sicyopus zosterophorum Gill, Proc. Acad. Nat. Sci. Phila., p. 262, 1863.
Bleeker, Versl. Akad. Amst., 2 ser. vol. IX, p. 287, 1876.

De Beaufort, Bijdr. Nederl. Dierk. Ver. Amsterdam, p. 145, plate II, fig. 5, 1913.

Dorsal VI-1-9; anal I-9-10; scales in lateral series 32, in transverse 8; predorsal scales 5 or 6 on females, but absent on males.

A male 39 mm. long has the depth 5.3 in the length; the head and the broadly rounded caudal are equal, 3.5 times in the length; the eye is 5, the snout 3.1 times in the head; the interorbital is 1.3 times in the eye. The broad pectoral is 4.8 times in the length; the vertical fins are low, the first dorsal 2.2 times in the head or 7.8 times in the length; the last anal and dorsal rays are longest, extending on the caudal when depressed, the anal 6.5, the dorsal 5.5 in the length; the ventral is broader than long, its length 1.8 in the head or 6.5 times in the standard length. The least depth of the caudal peduncle equals its length, 2.2 times in the head.

A gravid female 28 mm. long has the depth 4.66, the head and caudal 3.6, the pectoral 4.3 times in the length. The eye is 4.5, the snout 3.75

times in the head, the interorbital 2.8 times in the eye. The fins are all very low, the last dorsal and anal rays falling far short of reaching the caudal when depressed, 9 times in the length; the breadth of the ventral equals its length. Another female, 36 mm. long and not in breeding condition, has the depth 6.5, the head and caudal 3.6, the pectoral 4.8 times in the length; the ventral is perceptibly broader than long.

The body is low, elongate, the upper and lower profiles nearly horizontal, the back very little elevated, the broad head little depressed, the wide, blunt snout convex; the width of the head is a little more or less than 1.4 times, its height about twice, its own length. The mouth is large, with wide fleshy lips, the angle of the maxillary under the middle or posterior part of the eye; in the largest male it is under the hind margin of the eye, or a trifle more posteriorly.

The head is naked, and the under side of the body is naked back to the anus. The conical, pointed anal papilla of males equals the eye; that of females is short, expanded and slightly notched at the tip, becoming much thicker at spawning time.

The sexes are markedly different in coloration. In life, males are more or less dusky blue or violet on the front half of the body, or with wide dark blue bands anteriorly, while the posterior half, including the dorsal and anal fins, is brilliant carmine, with 3 narrow dusky blue or violet crossbands. In alcohol, a violaceous dusky band covers the head, and another enfolds the body from the origin of the first dorsal to that of the second dorsal; the rest of the body is pale tan, with 2 narrow dusky cross stripes below the second dorsal, and a third and wider one on the caudal peduncle; each scale on the body has a marginal vertical lunate dusky bar. The first dorsal fin is dusky blue or violet in life, with a narrow band of carmine along its upper margin and a violet marginal line; in alcohol it is dusky, the red band disappearing and leaving a clear stripe. The red vanishes from the second dorsal and anal, and they become clear with a marginal dark line. The other fins are colorless or nearly so.

Females are yellowish in alcohol, each scale with a vertical lunate marginal brown or violet-brown bar; on the back are 4 rather faint dusky crossbands; the first is before and under the first dorsal; the second is before the second dorsal; the third is under the middle of the second dorsal and is more or less divided; the fourth is on the caudal peduncle; a fifth may be present on the caudal base; the top of the head and snout are violaceous dusky. The fins are all clear.

Eight specimens were taken from a small creek in the hills at San Ramon Penal Colony, Zamboanga Province, Mindanao. Five females are from 28 to 36 mm. in length, the two smallest, 28 and 29 mm. in length, being filled with eggs and nearly ready to spawn. The eggs are very tiny and numerous. Three males in full nuptial coloration are 29 to 39 mm. in length. These fish live under stones and gravel in the pools and rapids of hill streams. Numerous specimens were seen in the

Pasonanca River several miles from the town of Zamboanga, but none were caught.

Previously known from a male 51 mm. long (the caudal fin probably included in this length), taken in Bali in 1855, and 2 males 38 and 45 mm. in length, collected by Dr. L. F. de Beaufort in 1910 from the Eme River, Ceram.

Undoubtedly this fish occurs in many places throughout Mindanao and the East Indies. Its habits and mode of life are like those of *Stiphodon elegans*, and like that widely distributed fish it is difficult to secure; even where the fish are easily seen, usually they cannot be caught by nets. When poisoned, they do not try to leave the water, as many fishes do, but burrow under rocks and into crevices and are rarely found.